

(i) producing a double stranded nucleic acid sequence that comprises at least one fluorescent donor and acceptor pair, wherein said fluorescent donor and acceptor are positioned on said double stranded nucleic acid sequence such that fluorescence is quenched by the transfer of donor fluorescence to the acceptor;

(ii) contacting said double stranded nucleic acid sequence with an enzyme that catalyzes a cleavage reaction which results in the separation of said donor and acceptor pair; and

(iii) continuously monitoring the change in fluorescence intensity as said cleavage reaction proceeds.

103. The method of Claim 102, wherein said fluorescent donor and acceptor are on the same strand comprised in said double stranded nucleic acid sequence.

104. The method of Claim 102, wherein said fluorescent donor and acceptor are on different strands in said double stranded nucleic acid sequence.

105. The method of Claim 102, wherein said fluorescent donor and acceptor pair is fluorescein/eosin or fluorescein/tetramethylrhodamine isothiocyanate.

106. The method of Claim 102, wherein said cleavage reaction occurs during a process that results in amplification of a nucleic acid sequence.

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107. The method of Claim 106, wherein said process is a polymerase chain reaction.

108. The method of Claim 102, wherein said double stranded nucleic acid sequence is a DNA sequence.--

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**REMARKS**

Entry of the foregoing amendments, reconsideration and reexamination of the subject application, as amended, pursuant to and consistent with 37 C.F.R. §1.116, and in light of the remarks which follow, are respectfully requested.

By the present amendments, Claims 64 and 65 (allowed) and 101 (allowable but for its dependency on a rejected claim) are cancelled. These claims are to be introduced into a divisional application.

Claims 102-108 are introduced in order to cover other preferred embodiments. Also, these claims find support from the disclosure as follows:

Claim 102: Finds support in at least Example 2, which describes cleavage of a double stranded nucleic acid sequence containing a fluorescent acceptor/donor, and